News and notes

Statement: The Bell Curve

This statement was developed by the National Institutes of Health – Department of Energy (NIH-DOE) Joint Working Group on the Ethical, Legal, and Social Implications of Human Genome Research (ELSI Working Group). This statement is endorsed by the National Society of Genetic Counsellors.

In 1994, a highly publicised book, Richard Herrnstein and Charles Murray's *The Bell Curve,* claimed that IQ is largely genetically determined and that the differences in IQ between ethnic groups are substantially explained by genetic factors. We are especially concerned about the impact of *The Bell Curve,* and books developing similar themes, because we believe that the legitimate successes of the Human Genome Project in identifying genes associated with human diseases should not be used to foster an environment in which mistaken claims for genetic determination of other human traits gain undeserved credibility.

Herrnstein and Murray suggest that IQ explains social problems such as crime, welfare dependence, and single parenting. They state that socio-cultural barriers to personal advancement have largely been removed and, consequently, social success and high IQ are highly correlated. They assert that, to the extent that IQ is genetically determined, programmes to eliminate inequalities are thus doomed to failure. Herrnstein and Murray are especially concerned that high birth rates among the poor and the "dysgenic" behaviour of women with high IQs, who are not bearing enough children, are threatening the population with genetic decline. According to them, these trends are "exerting downward pressure on the distribution of cognitive ability in the United States".

The authors follow this analysis with policy recommendations. They propose eliminating welfare, which they believe subsidises birth among poor women, thus lowering the average intelligence of the population. They suggest ending remedial education programmes because the results are not worth the cost, given the claimed significant genetic determination of IQ differences. They urge the development of programmes of social support that would encourage women from the higher socio-economic classes to have more children.

Neither Herrnstein nor Murray are geneticists, nor have they carried out studies themselves on the genetic basis of behaviour. Their lack of training and experience in genetics does not disqualify them from evaluating genetic research nor from drawing their own conclusions. However, as geneticists and ethicists associated with the Human Genome Project, we deplore *The Bell Curve*'s misrepresentation of the state of genetic knowledge in this area and the misuse of genetics to inform social policy.

We urge consideration of the following three points: First, Herrnstein and Murray invoke the authority of genetics to argue that "it is beyond significant technical dispute that cognitive ability is substantially heritable". Research in this field is still evolving, studies cited by Herrnstein and Murray face significant methodological difficulties, and the validity of results quoted are disputed. Many geneticists have pointed out the enormous scientific and methodological problems in attempting to separate genetic components from environmental contributors, particularly given the intricate interplay between genes and the environment that may affect such a complex human trait as intelligence.

Second, even if there was consensus on the heritability of cognitive ability, lessons from genetics are misrepresented. The authors argue that because cognitive ability is substantially heritable, it is not possible to change it and that remedial education is not worth the effort or cost. This is neither an accurate message from genetics nor a necessary lesson from efforts at remedial education. Heritability estimates are relevant only for the specific environment in which they are measured. Change the environment and the heritability of traits can change remarkably. Saying a trait has high heritability has never implied that the trait is fated to be. Height is both genetically determined and dependent on nutrition. Common conditions in which genetics play a role, such as diabetes or heart disease, can be corrected with insulin or cholesterol-lowering drugs and diet. The disabilities associated with single-gene conditions, such as phenylketonuria or Wilson disease, can also be prevented or significantly ameliorated by medical or nutritional therapy.

Third, the more scientists learn about human genes the more complexity is revealed. This complexity has become apparent as more genes correlated with human genetic diseases are discovered. We are only beginning to explore the intricate relationship between genes and environment and between individual genes and the rest of the human genome. If anything, the lack of predictability from genetic information has become the rule rather than the exception. Simplistic claims about the inheritance of such a complex trait as cognitive ability are unjustifiable; moreover, as the history of eugenics shows, they are dangerous.

Genetic arguments cannot and should not be used to determine or inform social policy in the areas cited by Herrnstein and Murray. Since the lessons of genetics are not deterministic, they do not provide useful information on deciding whether or not to pursue various programmes to enhance the capabilities of different members of society. Those decisions are moral, social, and political ones.